

CLAIMS

---

1. Spray-dried starch hydrolysate agglomerate product, **characterised in that** the  
5 starch hydrolysate has the following properties:
- a dextrose equivalent (DE) between 5 and 35;
  - a moisture content of < 6% by weight;
  - an unpacked bulk density between 0,4 and 0,6 g/cm<sup>3</sup>;
  - a compressibility of less than 10%;
  - 10 - a particle size distribution whereby less than 5% by weight is bigger than  
500 micron and less than 5% by weight is smaller than 53 micron;
  - an average particle size of between 150 – 250 micron;
  - a mechanical stability of > 95%;
  - a static angle of repose (SAOR) of less than 45°, as a measure for  
15 flowability; and
  - a dissolution speed of < 180 seconds.
2. Spray-dried starch hydrolysate agglomerate product according to claim 1,  
**characterised in that** the starch hydrolysate agglomerate product has the  
20 following properties:
- a DE between 5 and 35;
  - a moisture content of < 6% by weight;
  - an unpacked bulk density between 0,45 and 0,55 g/cm<sup>3</sup>;
  - a compressibility of less than 5%;
  - 25 - a particle size distribution whereby less than 3% by weight is bigger than  
500 micron and less than 3% by weight is smaller than 53 micron;
  - an average particle size of between 175 – 230 micron;
  - a mechanical stability of > 97%;
  - a SAOR of less than 40 °; and
  - 30 - a dissolution speed of < 120 seconds.

3. Spray-dried starch hydrolysate agglomerate product according to claim 2, **characterised in that** the starch hydrolysate has a dissolution speed of < 90 seconds.
- 5 4. Spray-dried starch hydrolysate agglomerate product according to any one of the claims 1 to 3, **characterised in that** the starch hydrolysate has a DE of between 10 to 22.
- 10 5. Method for preparing a spray-dried starch hydrolysate agglomerate product in a spray-drying tower, comprising spraying a liquid material onto a solid powder material, whereby the liquid material is atomised by means of one or more two-fluid nozzles using a fluid for heating and conveying this material, and whereby the agglomerated spray-dried starch hydrolysate is produced by injecting the solid powder material in the top of the drying tower in such a way that the trajectory of the powder crosses the spray pattern of the atomised liquid material, **characterised in that** the liquid material which is atomised by one or more two-fluid nozzles is a starch hydrolysate solution, whereby this starch hydrolysate solution is atomised using steam as said fluid.
- 15 6. Method according to claim 5, **characterised in that** the starch hydrolysate solution has a concentration of 50 – 75% dry matter.
- 20 7. Method according to claim 6, **characterised in that** the starch hydrolysate solution has a concentration of 65 – 75% dry matter.
- 25 8. Method according to any one of claims 5 to 7, **characterised in that** the steam has a pressure between 7 and 15 bar.
- 30 9. Method according to any one of the claims 5 to 8, **characterised in that** the weight ratio of steam versus starch hydrolysate solution is within the range of 0,05 and 0,4.

10. Method according to claim 9, **characterised in that** the weight ratio of steam versus starch hydrolysate solution is within the range of between 0,1 and 0,3.
- 5 11. Method according to any one of claims 5 to 10, **characterised in that** the heating air which is introduced in the spraying tower has a temperature between 160 and 300 °C.
- 10 12. Method according to claim 11, **characterised in that** the heating air which is introduced in the spraying tower has a temperature between 180 and 250 °C.
13. Method according to any one of claims 5 to 12, **characterised in that** at the bottom of the spraying tower air is exited which has a temperature between 80 and 125 °C.
- 15 14. Method according to claim 13, **characterised in that** the exiting air has a temperature between 90 and 120 °C.
- 20 15. Method according to any one of the claims 5 to 14, **characterised in that** the ratio between the solid powder and the starch hydrolysate solution is between 0,6 and 1,1 on a dry weight basis.
- 25 16. Method according to claim 15, **characterised in that** the ratio between the solid powder and the starch hydrolysate solution is between 0,8 and 1,0 on a dry weight basis.
17. Method according to any one of claims 5 to 16, **characterised in that** the dry powder is a starch hydrolysate powder.
- 30 18. Method according to claim 17, **characterised in that** the starch hydrolysate powder is a spray-dried form of the starch hydrolysate solution.

19. Method according to any one of the claims 5 to 18, **characterised in that** the agglomerated spray-dried starch hydrolysate particles is brought into a fluidised bed.

5

20. Method according to any one of the claims 5 to 19, **characterised in that** a spray-dried starch hydrolysate is obtained according to any one of the claims 1 to 4.